

APPLICATION FOR LETTERS PATENT

FOR

SOFTWARE DISTRIBUTION METHOD AND APPARATUS

INVENTOR(S):

KURT CLEMENT

Paul A. Revis, Reg No. 45,040  
Micron Electronics, Inc.  
900 East Karcher Road  
Nampa, ID 83687  
(208) 898-1316

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# SOFTWARE DISTRIBUTION METHOD AND APPARATUS

Inventor: Kurt Clement

## TECHNICAL FIELD

5 The present invention is directed toward a method and apparatus for providing digital data, such as software applications, to users. More specifically, the method and apparatus eliminate conventional inventory and distribution inefficiencies by transmitting digital data, along with means for activating that data, as part of originally manufactured computer systems.

## 10 BACKGROUND OF THE INVENTION

Maintenance of inventory has long been a costly and unfortunate reality of providing products to downstream users such as resellers or customers. In order to have products on hand for use, a supplier must either maintain a large enough inventory of products to meet any use requirements, or be able to very accurately  
15 predict use requirements and control supplies at the predicted use rate. A key variable, and one often disputed among buyers and sellers in a supply chain, is who will maintain ownership of a product at different points along the supply chain. The owner of a product bears the obvious cost of the time value of money of the product for as long as the product is owned.

20 A product supplier sometimes uses offers to maintain ownership of a product until actual time of purchase by an end user as an incentive to convince end sellers to carry the products of the product supplier. Traditionally, this is well known as consignment sales. Consignment sales and highly accurate inventory management, e.g. just-in-time inventory management, are illustrated in the prior art with regard to  
25 product distribution in U.S. Pat. No. 5,912,818, 5,712,989, and 5,671,362. As the economy has moved from a physical product distribution system to a system that

includes distribution of information and information products, inventory issues have also changed.

Many products of the modern economy are in fact information or digital data products. Examples include computer applications software, computer data files, analog and digital artistic and informational recordings, and the like. A distinct advantage enjoyed by information products over physical products is that information products can be stored with a minimal physical presence. For instance, the product may be stored on a recording media. However, under traditional models of distribution, information products are copied onto multiple physical media and subsequently distributed just like any other physical product. Another option for information products is to transfer or download an electronic copy of the information over a network such as a local or wide area network, or the Internet. Such transfers, especially with regard to transfer over the Internet, are typically slower than is convenient because of the relatively low bandwidth of the network. Long transfer time is a negative factor that potentially discourages an end user from using an information product.

One recent product that was introduced on a pay-as-you-use basis was Digital Video Express (DIVX). However, with DIVX a customer had to both buy digital media and pay a license fee each time the content of the media was accessed. This model did not prove commercially viable and new DIVX disks are no longer being sold. A significant problem with DIVX was the need to both buy the media and pay for its use.

ADOBE SYSTEMS, INC. has sold a product entitled "Type on Call." Type on Call stores many fonts on a CD-ROM. The CD-ROM is distributed to users who then must contact and pay ADOBE in order to receive an access code needed to activate one or more of the fonts. This art is disadvantageous because traditional distribution channels must still be used, and because a user must intervene and request an access code rather than having the computer system automatically control access.

The email, network, and Internet service provider AMERICA ONLINE, INC. (AOL) has used various methods to distribute its access software. AOL sometimes directly distributes free media containing its access software, and subsequently charges consumers for access to its connections and network. However, the software itself is not the value provided to the customer. The associated service is the value. The software is provided free of charge and "as is." A downside of the AOL model is that it still requires traditional distribution of media or a relatively slow download. Additionally, because there is no value assigned to the software itself, access to the software is not controlled. The access control is with regard to the associated service.

An improved system would conveniently provide digital data to an end user quickly and with little effort so that the user would be encouraged to use the data. Supply of the data in an improved system would avoid traditional distribution channels as well as physical inventory, thereby reducing costs to all parties. An improved system would also activate automatically in response to access to the digital data and would verify access rights of a user or provide the user with options to activate access rights. Improved systems could also take advantage of unused space in a computer system's nonvolatile memory space to cost effectively record data for subsequent transfer.

## SUMMARY OF THE INVENTION

An embodiment of the invention is a method of distributing software with a computer system to a user. An act of the embodiment is to record data on a fixed medium in the computer system. Another act is to provide for transfer of the computer system to the user. Additionally, access to the data is controlled through computer executable code that requires authorization for continued access to the data.

Another embodiment of the invention is a software module used in a computer system operable to provide controlled access to a software application being stored on a fixed medium in the computer system and being distributed with the computer system. The software module of the embodiment detects use of the software

application on the computer system, and verifies authority to access the software application.

Still another embodiment of the invention is a computer system operable to provide controlled access to a software application stored on a fixed medium in the computer system and distributed with the computer system. The embodiment may include a processor, a memory coupled to the processor, and a software module executable on the processor and the memory. The software module is responsive to the activation of the software application. The software module verifies authority to access the software application. If authority is verified, then uninterrupted access to the software application is allowed. If authority is not verified, then access to the software application is interrupted.

#### BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a functional block diagram of a computer system of an embodiment of the invention.

Figure 2 is a flowchart illustrating acts of an embodiment of the invention.

Figure 3 is a flowchart illustrating more specific acts of embodiments illustrated in Figure 2.

#### DETAILED DESCRIPTION OF THE INVENTION

Embodiments of the present invention are directed toward a computer system 1 as illustrated in Figure 1. The computer system 1 can be any of a number of computer systems capable of carrying out computer executable code. The computer system may be, for example, an INTERNATIONAL BUSINESS MACHINES, INC. type personal computer, or IBM clone, an APPLE COMPUTER, INC. machine, a mainframe or network host computer, a personal digital assistant (PDA) or handheld, or any other computing device having the capacity to process computer executable code.



Figure 2 illustrates a method of distributing software in accordance with an embodiment of the invention. As shown in the first action, block 10, data is recorded on a fixed medium such as a hard disk drive at the manufacturer. In addition to a hard disk drive, the fixed medium could be another type of nonvolatile storage device as is known in the art of computer system manufacture. For instance, the fixed medium could be a fixed optical disk, a programmable read-only memory, or some other such device capable of storing information in a nonvolatile way. The data that is recorded on the fixed medium may include both software application program instructions and the instructions of the software module. In some embodiments, the software application program instructions enable a software application that does not depend on continued access to a network for fully functional operation. In other words, the software application of these embodiments is a traditional software application such as a word processing application, spreadsheet application, a gaming application, or some other application that does not require continued access to a network. Examples of software applications requiring continued access to a network for full functionality are: Internet or network access applications, multi-player interactive Web based games, and hosted application software. Without a continuing connection to a network, the second set of applications are not enabled to perform their full range of functions. For instance, a Web browser could open and read a JPEG file from a computer system's hard disk drive without a connection to a network, but could not read a JPEG file from an external Web page. Embodiments of the present invention, on the other hand, are capable of continuing fully functional use after only a brief authorizing act via a network.

In a second act, block 20, a computer system is transferred to a user. The user  
25 may be an end-user, such as a consumer, or the user could be a reseller. Transfer of  
the computer system to a user could be by any delivery means, including  
conventional means as are well known in the art.

By the act of block 30, access to the data is controlled through the execution of computer code that implements authorization procedures. The executable





determined by checking whether the user or system had sufficient account credit to continue access to the data. Also, rather than inactivating access to data for insufficient account credit, users or systems with adequate qualifications could simply be billed for accessing the data regardless of the account balance.

5 As illustrated in block 35 of Figure 3, a user that does not have authority to access the data may be given the opportunity to set up an account and thereby gain access to the data. If the user does not wish to set up an account, the users ability to access the data may be disabled, block 36. Alternatively, if the user does want to set up an account for continued access to the data, the user will be asked to input personal  
10 data and make payment arrangements, block 37. Successful entry of adequate personal data and payment arrangements leads to continued access to the data, block 34. Unsuccessful entry may lead to the disabling of access to the data, as was noted in block 36.

### 15 **Advantages of the Invention**

Embodiments of the invention provide digital data, such as computer application software, to an end user quickly and with little required effort by the user. The user is therefore encouraged to “impulse buy” access to a software application that the user might otherwise forego. Specifically, if a user developed a data  
20 processing need during the period of ownership of a computer system, it would be a significant convenience for the user to merely activate a software application that met that need. Once activated the user would merely allow the system to automatically establish or assist in establishing the user’s access permissions. Compared with the traditional process of traveling to a retail outlet to buy a software application, mail  
25 ordering a software application that must be both inventoried and delivered, or going through the relatively long process of downloading the software application, embodiments of the invention provide significant advances to the state of the art.

Additionally, because embodiments of the present invention provide for delivery of digital data on a fixed medium in an originally manufactured computer

